



# Sri Indu

College of Engineering & Technology

UGC Autonomous Institution

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NAAC, Approved by AICTE &

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# NAAC

NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL



Title	<b>Guest Lecture on Face Recognition using Python</b>		
Organized by	<b>Dept of CSE</b>		
Academic Year	2020-2021	Program Type	Gust Lecture
Start Date	03.04.2021(One Day) (1:00 pm TO 2.30 pm)	End Date	--
Program Theme	To aware and enlighten the Career Opportunities in Face Recognition using Python for young engineering students		
No.of Students Participated	213	No.of Faculty Participated	15
No.of External Participants	-	Mode of Session	Online
Objectives	<ul style="list-style-type: none"> <li>➤ To enlighten the Career Guidance and Opportunities in Face Recognition using Python among students and faculties.</li> <li>➤ To develop emerging technologies among students and faculties.</li> <li>➤ To strengthen and motivate students through a supportive environment that helps them to establish their ideas and develop their concepts into publications and proposals.</li> <li>➤ To build a vibrant <b>emerging technologies</b>, by establishing a network between academia, financial institutions, industries, and other institutes.</li> </ul>		
Benefits in terms of Learning/Skill/Knowledge Obtained	<p>Inculcate EMERGING TECHNOLOGIES Opportunities in Face Recognition using Python among students and faculties</p> <ul style="list-style-type: none"> <li>➤ The Cell provides a platform to ideas which have great potential to become successful publications. These should solve the existing Social Issues.</li> <li>➤ Main benefit of the cell is to promote Project based learning and Helping selected ideas to lead towards publications and proposals.</li> </ul>		
Expert Member	<b>Mr. Anil Sharma, IIT Delhi.</b>		
Video URL	Event recorded video available for further promotion of activities.		
Description	Dept of CSE facilitates and encourages research culture among the faculty and students. Its prime role is to create contacts with their a world and promote research through a range of publications and Proposals. It takes upon the responsibility of creating a work Place to attract the best talent and strives continuously in pooling of skills and resources, creating strategy and overcoming limitations.		

# PHOTOGALLERY

## Face Recognition Steps contd..

Step4: Compute Euclidean distance and apply threshold

In general, for an  $n$ -dimensional space, the distance is

$$d(p, q) = \sqrt{(p_1 - q_1)^2 + (p_2 - q_2)^2 + \dots + (p_n - q_n)^2 + \dots + (p_n - q_n)^2}$$

Distance rules

- $< 0.5$  Match
- $> 0.5$  No match

Test Image

Database

colab.research.google.com/drive/13W2W586cKND9ZVABSSqKkqHF1ATL2H2#scrollTo=xnC8U9yY6yIP

### face-recognition using python

Code + Text

```
The left_eyebrow in this face has the following points: [(33, 91), (39, 82), (49, 78), (60, 78), (72, 80)]
The right_eyebrow in this face has the following points: [(91, 76), (103, 71), (115, 69), (128, 71), (137, 79)]
The nose_bridge in this face has the following points: [(81, 88), (81, 99), (81, 110), (81, 122)]
The left_eye in this face has the following points: [(72, 130), (78, 132), (84, 134), (91, 131), (98, 128)]
The right_eye in this face has the following points: [(103, 90), (110, 85), (117, 85), (124, 88), (118, 90), (110, 91)]
The top_lip in this face has the following points: [(61, 154), (70, 151), (79, 149), (86, 150), (94, 148), (106, 147), (119, 145), (116, 146), (95, 145)]
The bottom_lip in this face has the following points: [(119, 145), (107, 154), (96, 158), (88, 160), (80, 160), (71, 159), (61, 154), (64, 154), (95, 145)]
```

RAM 100% Disk 100%

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AI QUAD CAMERA

## Face Detection versus Recognition

Detection finds the faces in images

Recognition recognizes WHO the person is

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# Applications of face recognition

- Digital photography
- Surveillance
- Tele-education
- Album organization (organize photos by person)
- Emotion and expressions
- Identify number of unique people (for marketing)

ANIL SHARMA, PHD (IIT DELHI) (ANILS@IITD.AC.IN)

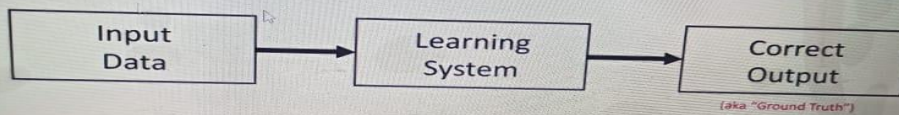
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```
cd ~/content/gdrive/MyDrive/IndWork/AICrashCourse  
/content/gdrive/MyDrive/IndWork/AICrashCourse  
[13] !pip install face_recognition  
Requirement already satisfied: face_recognition in /usr/local/lib/python3.8/dist-packages (1.3.0)  
Requirement already satisfied: Pillow in /usr/local/lib/python3.8/dist-packages (7.1.2)  
Requirement already satisfied: numpy in /usr/local/lib/python3.8/dist-packages (1.19.5)  
Requirement already satisfied: dlib==19.7 in /usr/local/lib/python3.8/dist-packages (19.18.0)  
Requirement already satisfied: face_recognition in /usr/local/lib/python3.8/dist-packages (1.3.0)  
Requirement already satisfied: Click>=6.0 in /usr/local/lib/python3.8/dist-packages (7.1.2)  
dist-packages (from face_recognition) (0.3.0)  
face_recognition (7.1.2)  
print ("Hello World")  
Hello World
```

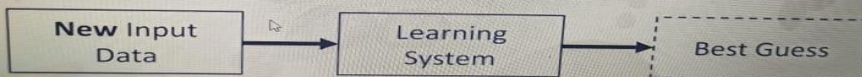
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# Training and Testing of ML System

## Training Stage:



## Testing Stage:



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